On semi-automated matching and integration of database schemas

Ünal-Karakas, Ö.

Citation for published version (APA):
Contents

1 INTRODUCTION 1
   1.1 Motivation and Requirements Analysis 1
   1.2 Addressed Research Questions 7
   1.3 Objectives and Contributions of the Thesis 9
   1.4 Scope of the Research 10
   1.5 Research Method 11
   1.6 Outline of the Dissertation 12

2 INTERLINKING AND INTEGRATING SCHEMAS - BACKGROUND 15
   2.1 Related Concepts 15
   2.2 Multidatabase Classification Based on Schema Coupling 20
   2.3 Schema Matching and Schema Integration 21
   2.4 Conclusion 27

3 HETEROGENEITY 29
   3.1 Related Concepts 29
   3.2 Taxonomy of Heterogeneity Resulted Conflicts 30
   3.3 Challenges for Schema Matching 35
   3.4 Conclusion 39

4 SASMINT APPROACH 41
   4.1 Related Research Approaches 41
   4.2 Proposed Approach: SASMINT 53
   4.3 Conclusion 92

5 SASMINT DEVELOPMENT ARCHITECTURE 95
   5.1 Processing Steps of SASMINT 95
   5.2 Technologies Applied 95
   5.3 Main Components of the System 97
   5.4 How does the System Work? 97
   5.5 Conclusions 105
6 EMPIRICAL VALIDATION OF SASMINT  107
6.1 Schema Matching Evaluations in Related Research  107
6.2 Quality Measures Used for Evaluating SASMINT  108
6.3 Test Schemas  112
6.4 Setup for the Experimental Evaluation  115
6.5 Evaluation of Schema Matching–For "select all above threshold" strategy  116
6.6 Evaluation of Schema Matching with Sampler  119
6.7 Evaluation of Schema Integration Performance  125
6.8 Conclusions  129

7 THESIS CONCLUSIONS AND FUTURE WORK  133
7.1 Summary of General Approach  133
7.2 Reflections on the Research Questions  134
7.3 Future Work  136

A LIST OF AUTHOR’S PUBLICATIONS  139
B XSD FOR SDML  141
C CLASS DIAGRAM FOR SDML  145
D TEST SCHEMAS  149
E EVALUATION OF SCHEMA MATCHING – FOR “SELECT MAX ABOVE THRESHOLD” STRATEGY  159
F EVALUATION OF SCHEMA INTEGRATION-DETAILS OF STEPS  163

BIBLIOGRAPHY  167
SUMMARY  175
SAMENVATTING  177
ACKNOWLEDGMENTS  181